walkera

华科尔

欢迎使用华科尔***WK-2602***遥控器

WK-2602
用户手册

注意：在使用前请您仔细阅读本说明书，请妥善保管本说明书以方便查阅。

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Part one: General Information

1.0 Foreword

The WK-2602 adopts the frequency-hopping spread spectrum 2.4G technology which features automatic code pairing, ID assignment and high capacity of anti-jamming. it uses the graphic menu which features simple easy-to-read operation.

1.1 Important Statements

(1) The transmitter is suitable for experienced radio controlled helicopter modelers beyond 14 years old.

(2) Flying the model aircraft in approved ground is a must.

(3) We are not responsible for any safety caused by operation, usage or control as soon as the transmitter is sold .

(4) We consign our distributors to offer technical support and service after sale. Please contact the local distributors for problem solutions caused by usage, operation, maintenance, etc.

1.2 Satety Needing Attention

(1) Far away from obstacle and people

RC helicopter in flight is uncertain of flight speed and status, which potential risk exists in. when flying, please keep your RC helicopter far away from people, high buildings, high-tension line, etc, and avoid operating in rain, storms, thunder and lightening.

(2) Away from humidity environment

RC helicopter should be kept away from humidity and vapor because it is composed of complicated precise electronic elements and mechanic parts.

(3) Proper operation

Please use Walkera original spare parts to upgrade, modify or maintain your equipment in order to assure its safety. Please operate your equipment within the range of functions permitted. It is forbidden to use of the safety laws or regulations.

(4) Safety operation

Please fly your equipment according to your body status and flight skills. Fatigue, listlessness and miss-operation will increase the possibilities of accidental hazard.

(5) Away from heat source

The inside of the transmitter is composed of many precise electronic components and mechanical parts. Keep it far away from heat sources and sunshine to avoid distortion, or even damage caused by high temperature.

(6) Correct Charging Method

It is prohibited to charge the battery by the CHG jack when using a non-rechargeable battery pack.

1.3 Attention before flight

(1) Ensure the battery packs of both transmitter and receiver are fully charged (saturated).

(2) Ensure both the throttle stick and the throttle trim of your transmitter stay at the lowest positions before operation.

(3) Please strictly obey the order of turn-on and turn-off before operation. When starting your flight, turn on your transmitter first, then connect the battery to the heli. When turning off the heli, disconnect the battery first, then turn off the transmitter. An upset in the order of connection may cause your helicopter to lose control. Please cultivate a correct habit of turn-on and turn-off.

(4) Ensure the directions and actions of the servos are correct when executing commands of the transmitter. Using a broken servo will result in unforeseen dangers.

2. 0 Features

2.1 Transmitter WK-2602

1. The WK-2602 adopts 2.4G frequency-hopping spread spectrum technology and features automatic code pairing and ID assignment.
2. Graphic display menu is simple to understand and to set.
3. The appearance design accords with ergonomics and features easy holding. The LCD screen with backlight and graphic interface looks more personalized.
4. Both the length and tension of the stick can be adjustable. It is convenient to freely switch among the 4 stick modes.

3. 0 Specifications

3.1 Transmitter Specification:

Encoder	6-channel micro computer system
Frequency	2.4G spread spectrum
Output Power	⩽10mW or ⩽100mW
Current Drain	⩽120mA (at 10mW) or ⩽230mA (at 100mW)
Power Source	1.2V × 8NiCad(9.6V600mAh) or 1.5V × 8 AA dry batteries
Output Pulse	1050-1850Ms(1500 Neutral)

3.2 Receiver Specification:

Type	Type: 2.4G 7 channel
Sensitivity	95dbm
Frequency Interval	⩾4M
Weight	10g
Dimension	39 × 28.5 × 14.5mm
Receiver Battery	4.8V 1100mAh

4.0 Face

Antenna
Gear
V1 konb
Elevator Trim
Elevator / Rudder Stick
Rudder Trim
UP / DOWN Function
EXT Function Key
LCD
Neck Strap Eyelet
V2 konb
Flight Mode SW
ELEV/AILE/RUDD
Throttle Trim
Throttle / Aileron stick
Power SW
Aileron Trim
Increase / Decrease Function Key
ENT Function Key

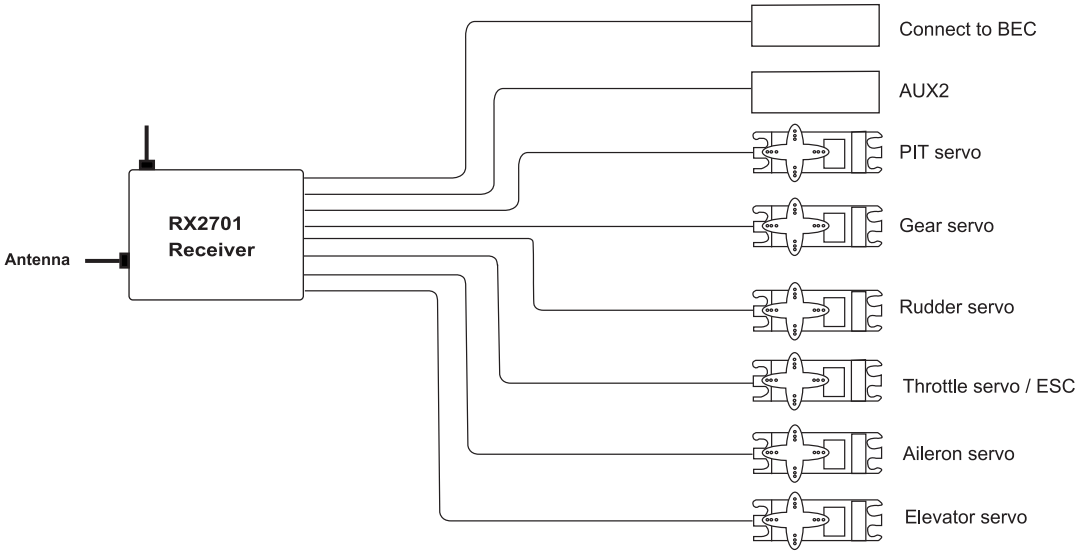
4.1 Back

Charging Jack: Input Voltage: 12V, Current: 50-100mA. Polarity: ⊕—•)—⊖

It's only fit for the rechargeable battery pack. Non-rechargeable one is strictly forbidden to use the charge function!

Analog signals output jack/ training jack (DSC): for simulator flight practice via computer (You need a software and its dongle which are available in hobby stores), and for training.

4.2 Wiring Diagram:



4.3 WK-2602 Input Key Function

EXT: Reset key, press EXT to exit the setting mode.

ENT: Enter key, press ENT to enter the setting and confirmation status.

·UP: Selection key, moves cursor up to the previous function item.

·DN: Selection key, moves cursor down to the next function item.

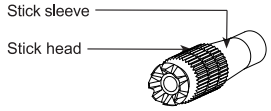
+R: Change the setting.

L-: Change the setting.

5.0 Control Stick Length Adjustment

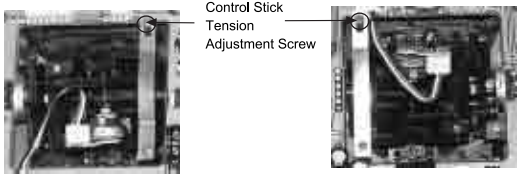
Prolong the stick length: CCW rotate the sitck head until the length you hope, and then CCW tighten the stick sleeve;

Shorten the stick length: CW rotate the stick sleeve until the length you hope, and then CW tighten the stick head.



5.1 Control Stick Tension Adjustment

Remove the 6 screws in the back cover of WK-2602, and remove the transmitter back cover (Be careful not to break the wires). Then use a Phillips screwdriver to adjust each screw on the throttle arresting spring for the desired tension (Note: CW rotate to tighten the stick and CCW rotate to loosen).

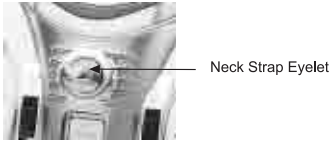


Right Throttle Stick

Left Throttle Stick

5.2 Neck Strap Usage

The neck strap can be hooked on the face of the WK-2602 transmitter. The Hook located at the center helps to get optimal balance of the transmitter.

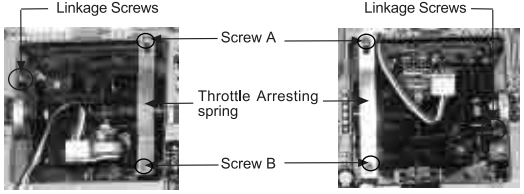


5.3 Mechanical throttle switch methods

5.3.1 Right-hand throttle swtiched to left-hand throttle

A. The stick position change

Remove the battery pack and the 6 fixing screws in the back of transmitter, and then remove the transmitter back case (Be careful not to break the wires inside). Use a Phillips screwdriver to loosen the linkage screws, screw A, screw B and the throttle arresting spring in the right throttle position. Then mount them to the corresponding positions in the left throttle position. Adjust screw A according to the personal hand feeling (adjust the tension of the throttle stick). Then install the transmitter back case.

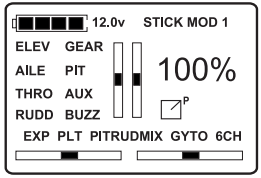


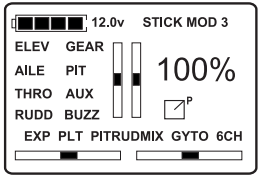
Right Throttle Position

Left Throttle Position

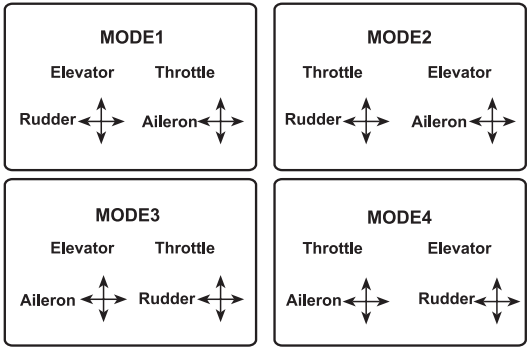
B. The data switch

Press ENT and both STICK MOD and its current status of stick (any one number from 1 through 4) flashi. That means the setting status is entered. Press R or L to flash the number 1 or 3 behind STICK MOD. Press ENT to confirm and exit by pressing EXT.





The right-hand throttle includes two modes: MODE 1 and MODE 3; The left-hand includes another two modes: MODE 2 and MODE 4. Refer to the following sketch map:

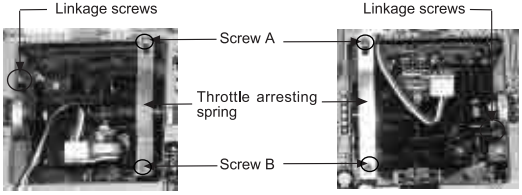


The switch from right hand throttle to left is completed and your WK-2602 is ready for normal flying.

5.3.2 Left-hand throttle swtiched to right hand

A. The stick position change

Remove the battery pack and the 6 fixing screws in the back of transmitter, and then remove the transmitter back case (Be careful not to break the wires inside). Use a Phillips screwdriver to loosen the linkage screws, screw A, screw B and the throttle arresting spring in the left throttle position. Then mount them to the corresponding positions in the right throttle position. Adjust screw A according to the personal hand feeling (adjust the tension of the throttle stick). Then install the transmitter back case.

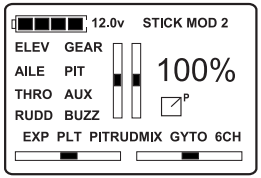


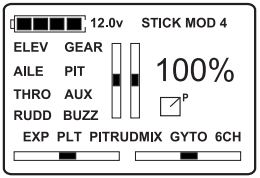
Right Throttle Position

Left Throttle Position

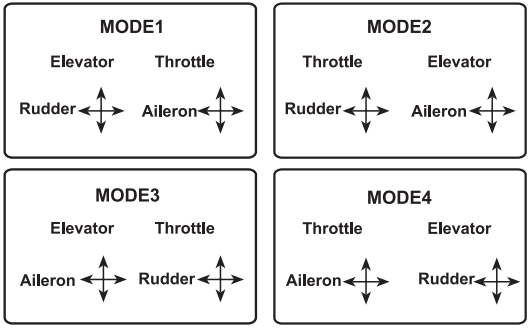
B. The data switch

Press ENT and both STICK MOD and its current status of stick (any one number of 1 through 4) are flashing. That means the setting status is entered. Press R or L to flash the number 2 or 4 behind STICK MOD. Press ENT to confirm and exit by pressing EXT.





The left-hand includes two modes: MODE 2 and MODE 4; The right-hand throttle includes another two modes: MODE 1 and MODE 3. Refer to the following sketch map:



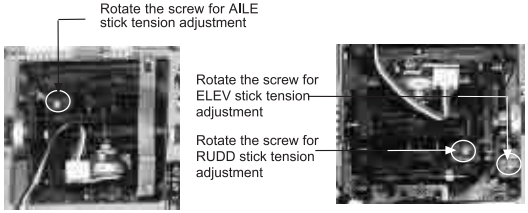
The switch from left hand throttle to right is completed and your WK-2602 is ready for normal flying.

Note: Pay attention to the strength when removing and adjusting the screws. Excessive strength may damage them.

5.4 Stick tension adjustment

A. Stick tention adjustment of right-hand throttle (take MODE 1 as an example)

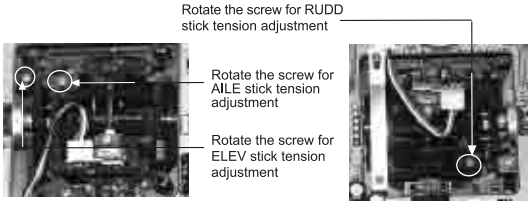
Remove batteries and fixing screws in the cover of WK-2602 and open the cover (don't break wires inside). Use a Phillips screwdriver to rotate the screw which is corresponding to the relative stick shown as the pictures below: clockwise rotation increases the tension and counterclockwise rotation decreases the tension.


Rotate the screw for AILE stick tension adjustment
Rotate the screw for ELEV stick tension adjustment
Rotate the screw for RUDD stick tension adjustment

Adjustment method of right-hand throttle

B. Stick tention adjustment of left-hand throttle (take MODE 2 as an example)

Remove batteries and fixing screws in the cover of WK-2602 and open the cover (don't break wires inside). Use a Phillips screwdriver to rotate the screw which is corresponding to the relative stick shown as the pictures below: clockwise rotation increases the tension and counterclockwise rotation decreases the tension.


Rotate the screw for RUDD stick tension adjustment
Rotate the screw for AILE stick tension adjustment
Rotate the screw for ELEV stick tension adjustment

Adjustment method of left-hand throttle

6. 0 Installation Requirements

It is important to correctly mount your radio system in your model. Below are some advices on how to install your equipments.

1. Wrap the receiver with 10mm thick foam and fix it with a rubber band or string on your helicopter or plane. It helps protect the receiver.
2. It is necessary for you to use rubber grommets and copper sleeves to isolate the vibration from the main body. The mounting screws cannot be over-tightened. Otherwise, the rubber grommets will be distorted and decrease the vibration absorption effect.

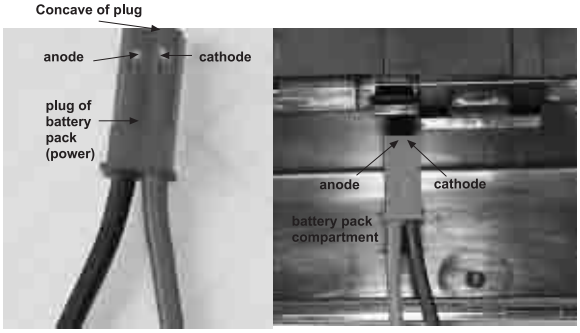
3. When mounting the servos, make sure the servos' bellcranks can move freely over their whole travel range and ensure the control linkages don't touch or impede the movement of the servos.

4. If installing various switches, keep them far away from the engine tuned pipe and high vibration sources. Ensure all the switches move freely over their whole range.

5. Don't make the receiver antennas wrapped or parallel.

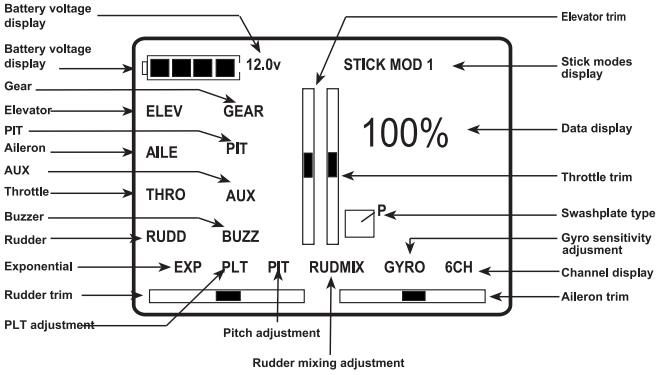
6. Mount the transmitter battery pack as the following picture:

When inserting the plug of battery pack, aim the concave of the plug at the concave of socket.



Party two: Function Setup

1. 0 Main Menu



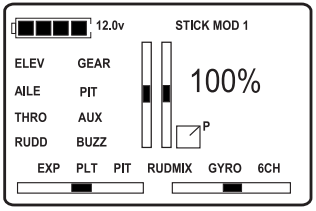
When turning on the transmitter power, ID-binding alarm will buzz once, and 4 trims bars begin to make stream-like movements. After the ID binding is finished, the ID-binding alarm will buzz once again, and 4 trim bars stream-like movements stops, instead opening screen appears.

2. 0 Swashplate type

Press ENT to flash both the SICK MOD and its current status of stick (any one number from 1 throgh 4). That means the setting status is entered. Press UP or DN to flash the swashplate type, and then press R or L to choose the desired swashplate type. Press ENT to confirm and then press EXT to exit. The swashplate type graphics respectively shows: 1 servo (NORM), 3 servos (120° E-P-A), and 3 servos (120° P-E-A).

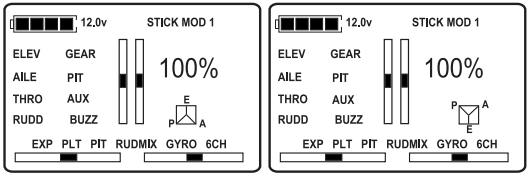
1. 1 servo

This is the commonest type which uses one servo to drive the pitch.



3. 3 servos

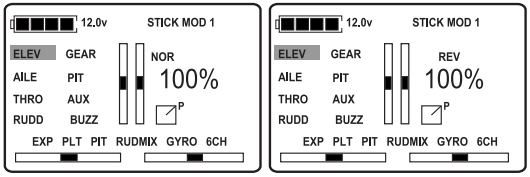
3 servos are used to run CCPM mode (cyclic-collective-pitch-mixing mode). It utilizes three servos to operate the swashplate in the form of mixing manner to control over the functions of aileron, elevator and pitch CCPM is the most popular control manner at present because the transmission structure is simplest and coordinated operation of three servos relieves the servos' load.



3. 0 Channel reverse setup

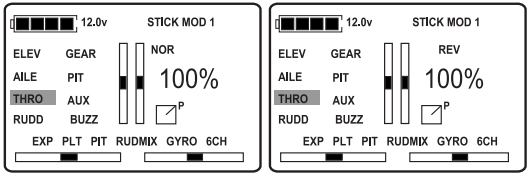
ELEV reverse setup

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to ELEV, and both the ELEV and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.



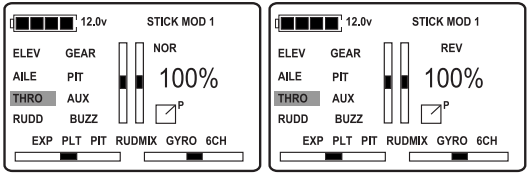
AILE reverse setup

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to AILE, and both the AILE and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.



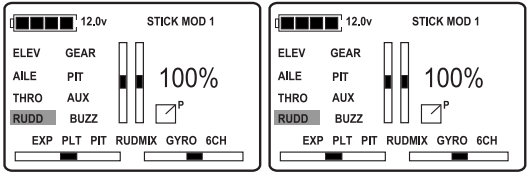
THRO reverse setup

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to THRO, and both the THRO and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.



RUDD reverse setup

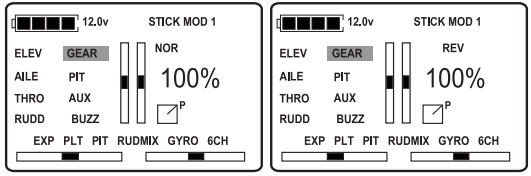
Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to RUDD, and both the RUDD and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.



GEAR reverse setup

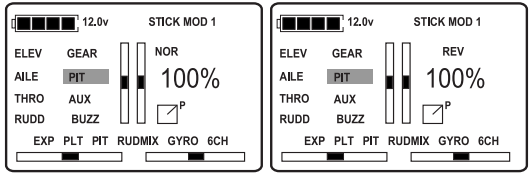
Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered.

Press UP or DN to GEAR, and both the GEAR and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.



PIT reverse setup

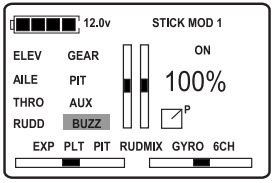
Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to PIT, and both the PIT and the current status NOR or REV flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.

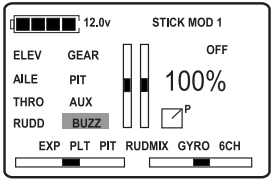


4.0 Buzzer setup

The buzzer setup includes two status: ON or OFF. Below is the setting method:

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to BUZZ, and both the BUZZ and the current status ON or OFF flashing. If want to make reverse, press R or L to let REV or NOR flashing, and then press ENT to confirm. Press EXT to exit and save.





5.0 Exponential function

The knobs of V1 and V2 of WK-2602 correspond respectively to the following functions:

	Functions
V1	Throttle curve, PIT, gyro sensitivity
V2	Servo exponential, PLT, rudder mixing

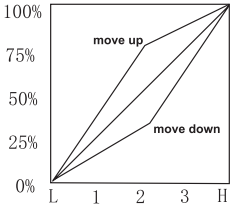
5.1 Throttle curve and servo exponential function

The throttle curve and servo exponential function can be respectively adjusted via the V1 and V2 knobs on the panel of WK-2602. The method is shown as below:

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to EXP, and both the EXP and the current status OFF flashing. If want to adjust the throttle curve and servo exponential, press R or L to let OFF become a flashing ON. Rotate V1 knob to adjust the throttle curve and rotate V2 to adjust the servo exponential parameter. That the knobs V1 and/ or V2 aim at the central point (the printed character(s) V1 and/ or V2 on the panel), respectively, stands for a linear relationship.

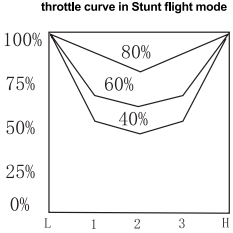
5.1.1 Adjustment for normal throttle curve

Switch the Flight mode to Normal from Stunt. To rotate V1 toward "+" is to move up the central point of throttle curve up to a maximum range of 80%; to rotate V2 toward "-" is to move down the central point of throttle curve up to a maximum range of 40%. The knob V1 aiming at the central point is a linear relationship. It is shown as the following picture:



5.1.2 Adjustment for stunt throttle curve

Switch the Flight mode to Stunt from Normal. When the knob V1 aims at the central point, the curve is a V shape and the throttle central point is at 60%. To rotate V1 toward "+" is to move up the central point of throttle curve up to a maximum range of 80%. To rotate V1 toward "-" is to move down the central point of throttle curve up to a maximum range of 40%. It is shown as the following picture.



5.1.3 Adjustment for servo exponential

To rotate V2 aiming at the central point is a linear relationship (Fig. 1). If rotating V2 toward "+" , the servo curve is changed in the form of exponential (Fig. 2). If rotating V2 toward "-", the servo curve is changed in the form of exponential (Fig. 3).

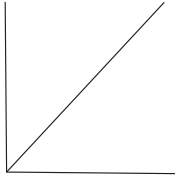


Fig.1

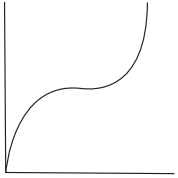


Fig.2

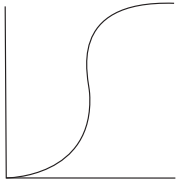
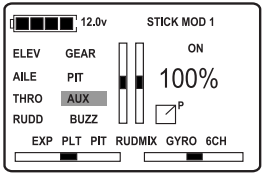


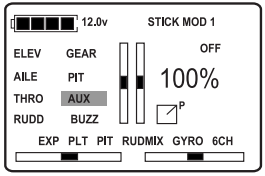
Fig.3

When the adjustment is finished, press ENT to confirm, and then press R or L to make ON become a flashing OFF. Then press ENT to confirm and lock the knob. Press EXT to exit.

5.1.4 Compatibility setting for exponential function

When flying Walkera-series helicopters without EXP function, refer to the following setting method to make all ELEV, AILE and RUDD experience EXP function:





Press ENT and both STICK MOD and its current status of stick (any one number of 1 through 4) are flashing. That means the setting status is entered. Press UP or DN to flash both AUX and its current status OFF. If want to set the exponential parameters, press R or L to let ON flashing from OFF. Rotating V_2 toward "-" features the exponential curve as in Fig. 2. Rotating V_2 toward "+" features the exponential curve as in Fig. 3. Aiming V2 at the central point features a linear relationship as in Fig. 1. When setting finished, press R or L to change the flashing ON into a flashing OFF to lock the set parameters and then press EXT to exit.

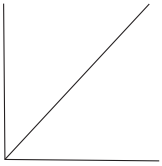


Fig.1

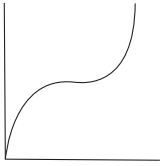


Fig.2

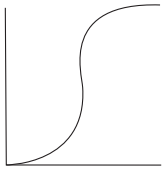


Fig.3

6.0 PIT adjustment

There are adjustments to PIT (Pitch) and PLT (pitch servo travel adjustment) in WK-2602, whose parameters can be adjusted and then locked. The method is shown as below:

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to PLT/ PIT, and both the PLT/ PIT and the current status OFF flashing. If want to set PIT and PLT, press R or L to make OFF become a flashing ON. Rotate V1 for the adjustment of the PIT parameter, and V2 for PLT.

6.1 PIT adjustment

To rotate V1 toward "+" is to increase the pitch value; to rotate V1 toward "-" is to decrease the pitch value.

6.2 PLT adjustment

To rotate V2 toward "+" is to increase the PLT value; to rotate V2 toward "-" is to decrease the PLT value.

When the adjustment is finished, press ENT to confirm, and then press R or L to make ON become a flashing OFF. Then press ENT to confirm and lock the knob. Press EXT to exit.

7.0 Adjustment of gyro sensitivity and rudder mixing

7.1 Direction adjustment of rudder mixing

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to RUDMIX, and both the RUDMIX and the current status NOR or REV are flashing. If want to set RUDMIX, press R or L to make NOR or REV flashing. Press ENT to confirm and then press EXT to exit.

7.2 Adjustment of gyro sensitivity and rudder mixing

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to RUDDMIX GYRO, and both the RUDDMIX GYRO and the current status OFF are flashing. If want to set the gyro sensitivity and the rudder mixing, press R or L to make OFF become a flashing ON. To rotate V1 is to adjust the gyro sensitivity, and to rotate V2 is to adjust the rudder mixing.

7.2.1 Adjustment of gyro sensitivity

V1 is used for the adjustment of gyro sensitivity. When V1 aims at the central point, the gyro sensitivity is 0%. Rotating V1 toward "-" is the gyro sensitivity at NOR mode, whos adjustable range is 0 - 100%;

Rotating V1 toward "+" is the gyro sensitivity at LOCK mode, whose adjustable range is 0 – 100%. The concrete value of gyro sensitivity depends on the aircraft you are flying. The experienced value is 70-80% for hover flight, and 60-70% for stunt flight. It is recommended to use LOCK mode in flight.

7.2.2 Adjustment of rudder sensitivity

V2 is used for the adjustment of rudder mixing. When V2 aims at the central point, the rudder mixing value is 40%. To rotate V2 toward "+" is to increase the rudder mixing value, whose maximum adjustable range is up to 80%;

To rotate V2 toward "-" is to decrease the rudder mixing value, whose maximum adjustable range is up to 0%.

When the adjustment is finished, press ENT to confirm, and then press R or L to make ON become a flashing OFF. Then press ENT to confirm and lock the knob. Press EXT to exit.

7.2.3 Dual Rate (D/R)

Dual Rate is the ability to alter the travel rate of a servo from a switch. When push D/R switch forward, the travel rate of servo (ELEV/AILE/RUDD) is 100%. When pull it back, the travel rate is 50%. This function is favorated by beginners.

8.0 Setting for compatibility

WK-2602 can be compatible with all the 4-channel radios WK-24101 and WK-2402, and 6-channel radio WK-2601. the setting method is shown below:

Press ENT to flash both STICK MOD and its current status of stick (any one number of 1 through 4). That means the setting status is entered. Press UP or DN to flash 6CH. If want to be compatible with WK-2401 and WK-2402, press R or L to make 6CH become a flashing 4CH. When the setting is finished, press ENT to confirm and then press EXT to exit.

8.1 Flight mode

If want to fly in normal mode, just switch the flight mode to the position of N; if want to fly in stunt mode, just switch to the position of 1.

WK-2602 will make alarm and stop emitting any signals and enters protective status if the flight mode is at the position 1 when turning on the transmitter. Switch the flight mode to N to relieve the protective status.

RC WALKERA PRODUCT

The specifications of the R/C Product may be altered without notice.